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MATTHEY ON-GLAZE TRANSFERS FOR POTTERY

Johnson & Matthey

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MATTHEY ON-GLAZE TRANSFERS FOR POTTERY

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ON-GLAZE TRANSFERS

for Pottery

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JOHNSON MATTHEY & CO., LIMITED
73-83 HATTON GARDEN
LONDON E.C.1



FEB 28 1952

MATTHEY

ON-GLAZE TRANSFERS

THE
MODERN
METHOD OF
DECORATING
POTTERY

This new process makes available for the first time the many advantages of silk-screen printing in the form of an enamel transfer and is no less revolutionary than was the introduction of the lithographic transfer process as a means of decorating pottery.

By this new method of decoration, operators of little experience may now produce effects of a quality which in the past have been unattainable except by skilled hand-painting. It is not intended that Matthey transfers should take the place of well-established processes such as lithographic transfers or "printing and enamelling," but rather that they should widen the scope of the decorating shop and help to increase the production of high quality decorated ware at the minimum of cost.

Village Maid

*An "open" pattern,
best suited to the
decoration of china.*

THE RELIEF
EFFECT

The outstanding feature of the new transfers after firing is the richness of the enamel deposit. The enamels stand out from the ware in varied relief to catch the light and give an effect at once suggestive of hand-painting. As a result of this enamel thickness, all bright colours gain in intensity and brilliance, while the palest of pastel shades have ample body and do not look thin or "washy."

SIMPLICITY
IN USE

The Matthey transfer process dispenses entirely with many operations that are necessary in the handling of other types of transfer. The only items of equipment required are a cloth-padded tray, blotting paper, a rubber squeegee and a supply of clean water.

There is :

- NO stripping of tissue from backing paper
- NO sizing of the ware
- NO waiting for the size to become "tacky"
- NO hard rubbing down of the transfer
- NO washing off of the tissue
- NO difficulty in positioning the transfer, as it can easily be moved about on the surface of the ware
- NO delay between application and firing



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*Applying "Clareville" to plates as a central spray.
The simplicity and cleanliness of the Matthey
process are evident.*

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By using Matthey transfers relatively unskilled labour can produce results, in bulk, that could otherwise only be obtained one at a time by the employment of highly skilled artists.

Matthey transfers consist of a deposit of enamel printed on to a collodion film, this being attached by a water-soluble gum to a backing paper for support.

In addition to attaching the collodion film to the backing paper, the gum serves to stick the transfer to the ware to be decorated ; consequently no sizing is required. The transfers are simply soaked on the damp pad until the collodion film becomes detachable from the backing paper. The film on which the enamel is printed is then slid off the backing paper on to the ware, carrying with it sufficient gum to effect its perfect adhesion to the piece being decorated. The film must be applied ENAMEL SIDE UPWARDS. Superfluous water and air-bubbles are pressed out with a fine sponge, blotting paper or a squeegee to ensure that the whole of the film dries in perfect contact with the ware.

Included with this booklet will be found a step-by-step illustrated description of the application of Matthey transfers. Further copies of these instructions for workroom use will be provided on request.

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THE
DESIGNS

A staff of artists, trained in the technicalities of the process, is permanently engaged on the production of designs to meet the requirements of various world markets.

The most attractive, economical and successful designs are those which are originated especially for the Matthey printing process, in the full knowledge of its possibilities. Designs which have been prepared for one printing process seldom lend themselves satisfactorily to reproduction by another and can never have the same appearance. We are, however, always ready to adapt existing patterns, as far as is possible, to the technique of screen printing, or to work out in detail a customer's own suggestions. When a customer wishes to produce his own designs, we urge him first to consult us to ensure that they can easily be applied to his ware by this process.

Matthey transfer patterns are of two classes—"open" designs, which are sold without discrimination, and "controllable" patterns, which, if designed by us, are sold to one customer only with exclusive rights. A small charge is made for such rights and it is pre-supposed that the value of the order will be sufficient to warrant the sale of the exclusive rights of the pattern.

The Matthey process does not lend itself to the execution of wholly continuous border patterns, the enamel deposit being so thick that it does not permit the film to be stretched or gathered.



The film must be of the right shape to lie perfectly flat on the ware when it is dry, and one end of the border must not overlap the other. The effect of a continuous border is easily contrived by designing the transfers in such a way that there are a number of very small breaks in the pattern. Places where joins are made are then invisible on the fired ware.

The decoration of spherically curved surfaces with large sizes of transfer may also present some difficulty, again by reason of the thickness of the enamel, which is liable to crack in firing if the underlying film is creased. Relieving cuts made in the transfer film will usually permit it to be smoothed into perfect contact with the ware.

In addition to floral sprays and centres, Matthey transfers, because of their thick coating of enamel, are very suitable for incised or "sgraffito" decoration, and for the simulation of ground-laid panels.

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Samarkand

A modern earthenware design in two colours, showing how the effect of continuous borders may be obtained with Matthey transfers.

THE
ENAMELS

All enamels used in the manufacture of Matthey transfers are made by us. We are, therefore, in full control of the potter's technical requirements. If the main theme of a design is applied by transfer and it is to be embellished by hand work, enamels identical with any of those embodied in the transfers are available. Brush work may be added to the transfer after it is applied and both the transfer and the added enamel may be fired in one operation.

The present range of enamels, of quite recent introduction, is the result of intensive research work. Special attention has been given not only to the peculiar requirements of this process but also to durability and the need for soft pastel shades which can be used in combination with the more vivid colours. The range is divided into three groups according to firing temperature :

- 1 "Easy-fire" resistant enamels for firing at 640° — 670° C. (1185° — 1240° F.) for use on earthenware or china.
- 2 Enamels firing at 700° — 750° C. (1290° — 1380° F.) according to the nature of the glaze, for use on earthenware and china.

Clareville

This "open" pattern is for either china or earthenware. The examples are of earthenware banded with Johnson, Matthey pink lustre and finished with copper lustre.



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- 3 Enamels firing at 750° — 800° C. (1380° — 1470° F.) for use on china and felspathic china.

The "Easy-fire" enamels, which are an entirely new development, will be of considerable interest to those equipped to carry out firing within their temperature range. Economy in fuel costs, a shorter firing time-cycle, and avoidance of "spit-out" are the principal advantages to be gained from the use of "Easy-fire" enamels. Despite their low firing temperature they will pass tests considerably more stringent than those specified by the British Standards Institution for resistance to acids, alkalies and abrasions (BS 1344 : 1947). Each "Easy-Fire" enamel has been adopted only after the most rigorous selective tests.

DURABILITY

Most potters have their individual methods of testing durability, but a summary of those used in our laboratories will serve as a reliable estimate of the qualities of all Matthey enamels.

- 1 *Acid Resistance.* The specimen is immersed in a 6 per cent. solution of citric acid for one hour at 30° C. (86° F.). The gloss of the enamel should not be removed by this treatment.
- 2 *Alkali Resistance.* The specimen is immersed in a solution containing 10 per cent, sodium hydroxide and 10 per cent. sodium carbonate for one hour at 80° C. (176° F.). The gloss of the enamel should not be removed by this treatment.

3 *Sulphide Resistance.* The specimen should not be stained after remaining in contact for one hour at room temperature with a disc of filter paper soaked with a saturated solution of hydrogen sulphide.

4 *Abrasion Resistance.* The specimen should withstand abrasion by finely powdered apatite (No. 5 on Moh's scale of hardness) without being scratched.

Although these are accelerated tests designed for laboratory use, it has been established that enamels which pass them are most unlikely to be attacked by fruit acids or the usual household detergents.

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COST

The cost of Matthey transfers is determined by the size of the spray or motif and the number of colours used. The total number of colours which may be embodied in one transfer is limited only by the need for economy. It is seldom necessary to design for more than six or seven colours, and some excellent decorative effects may be gained by the use of only one or two. In the majority of our patterns four or five colours are used, giving a rich effect at low cost.

The transfers are supplied in sheets approximately 12 inches square. Quotations are normally based on the numbers of separate motifs supplied. Therefore, manufacturers purchase



only the number of motifs required and are not called upon to buy sheets which may carry a quantity of motifs which are not needed. Furthermore, the costing of decoration is made positive and simple. We reserve the right to print more than one motif on a sheet for economy in production.

As a result of close co-operation with and help from many members of the pottery trade, Matthey on-glaze transfers have already reached a state of production which constitutes a substantial aid in the decoration of pottery. We invite further enquiries and will gladly co-operate in aiming to produce transfers which will give every satisfaction. When communicating with us it will be of the greatest assistance if details are included of the approximate firing temperature and the nature of the ware, i.e., whether china, earthenware or felspathic china is to be decorated.

Ranelagh

A "controllable" design which demonstrates the use of Matthey transfers as a substitute for ground-laying.

MATTHEY PRODUCTS FOR THE DECORATION OF CHINA, EARTHENWARE AND GLASS

This booklet has described only one of the many Matthey products for the pottery and glass industries. Others of our range are listed below, and specific information on any of these will be sent on request.

Liquid bright gold, silver and platinum
Liquid burnish gold, silver and platinum
Prepared gold and platinum powders
Precipitated gold powders
Liquid lustres
Over-glaze enamels
Under-glaze colours
Glass stains
Media for relief enamels
Media for brushing, spraying and screening
Glass enamels
Crinkle enamels
Matthey enamel transfers for glass
Shading, tracing and patina enamels for stained glass

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MATTHEY ON-GLAZE TRANSFER

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MATTHEY TRANSFERS consist of enamels printed on to a collodion film. The film is attached by a water-soluble gum to a backing paper for support.

The equipment required for their application comprises only

A shallow tray or dish

A clean, fluffless rag

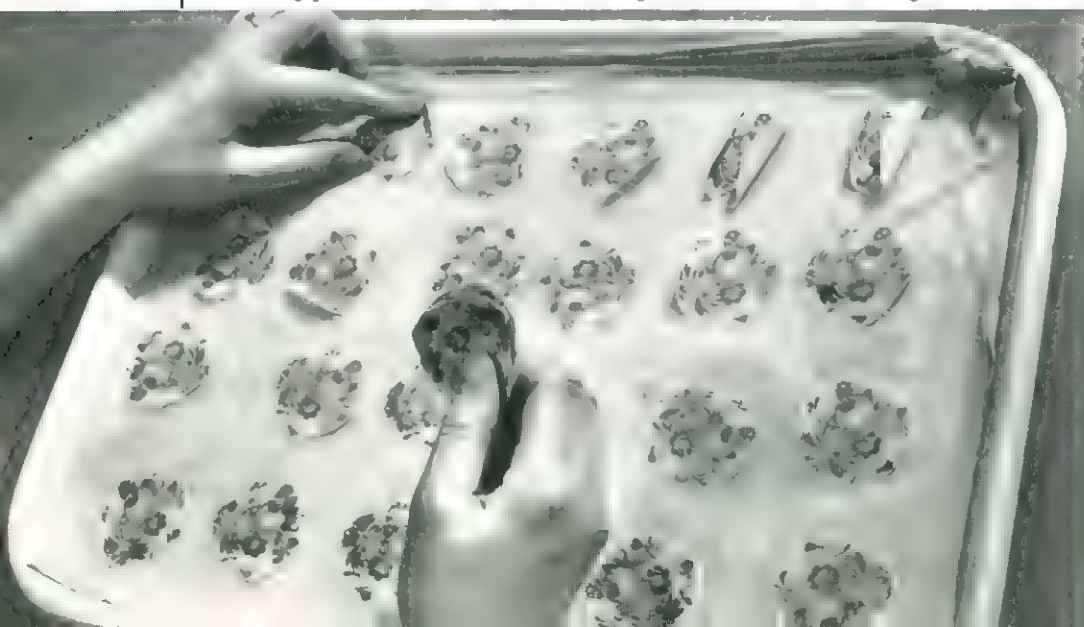
Clean water

Some fresh blotting paper or a rubber squeegee.

Cleanliness is most important. The ware, the water and all equipment used must be free from grease, dirt and dust.

Line the bottom of the tray or dish with several layers of fluffless fabric, such as linen; fold it so that it lies quite flat. Soak this pad of fabric with clean cold or lukewarm water until the pad is just covered.

Soaking the transfers upon a bed of saturated cloth. Notice the manner in which the transfer is being pressed into close contact with the pad to ensure its even wetting.



As the word "transfer" implies, it is necessary to remove the film bearing the enamel decoration from its backing paper and to transfer the film to the ware which is to be decorated. The following procedure is recommended.

Place the transfer on to the saturated pad (ENAMEL SIDE UP) and press it down in order that the paper all over may absorb water.

The transfer will first curl and then, as it absorbs water, it will uncurl and lie flat on the pad. The whole of the paper must be soaked by the water so that the gum attaching the film to the paper may be sufficiently softened.

In a minute or two it will be found that the film is loose and will slide easily over the surface of the backing paper. When this stage is reached the transfer is ready for application to the ware. Prolonged soaking of the film should be avoided because so much gum will be removed that insufficient will remain on the film to ensure its adhesion to the ware. In this case it may appear to stick correctly but on drying it will gradually curl away from the ware. The gum remaining on the underside of the film takes the place of the size which is used with the lithographic type of transfer. Normally a soaking time of one to three minutes is sufficient.

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Withdrawing the backing paper after the soaked transfer has been positioned, enamel side upwards, upon the ware. The tough collodion film is easily anchored with the thumb of one hand while the backing paper is removed.

Lift the whole soaked transfer, film and paper together, from the pad and lay it, ENAMEL SIDE UP, on the ware. Slide one end

of the film a little way off its backing paper and hold this end on to the ware with the thumb of one hand. Withdraw the exposed backing paper from beneath the film with the other hand.

The film is now lying directly on the ware ENAMEL SIDE UP.

Adjust the film to its exact position. It is tough and will slide about quite easily as long as it is still wet.

Press out the water from under the film with a potter's sponge, blotting paper or rubber squeegee, taking care not to crack the enamel.



Squeezing the transfer, after final positioning, into intimate contact with the surface of the ware. In this case the squeegee is of folded blotting paper, but for certain applications quicker and equally good results are given by a rubber squeegee.

Make a "squeegee" by folding a small piece of blotting paper several times and with its edge stroke out any remaining water or creases in the film, working always from the centre towards the outside of the transfer.

This operation not only removes all wrinkles in the film but it helps the gum left beneath it to stick the film to the ware. Care must be taken not to crack or crease the enamel by over energetic use of the squeegee but sufficient pressure must be employed to ensure all-over adhesion. For flat surfaces many operators prefer using a squeegee made from a small piece of soft rubber about $\frac{1}{8}$ in. thick. A few strokes with this rubber squeegee will effectively press out all the water from beneath the transfer. It is necessary to mop up the expelled water with a clean, soft towel or rag, taking care that no fluff is allowed to remain on the enamel.

If air-bubbles are trapped in the clear part of the film, they may be pricked with a pin. The spot can then be moistened and the film pressed down into contact

All surplus water has been removed with the squeegee and care taken to ensure that there are no air bubbles between the film and the ware or creases which traverse any of the areas of enamel. The transfer is now, after a very short drying, ready for firing.

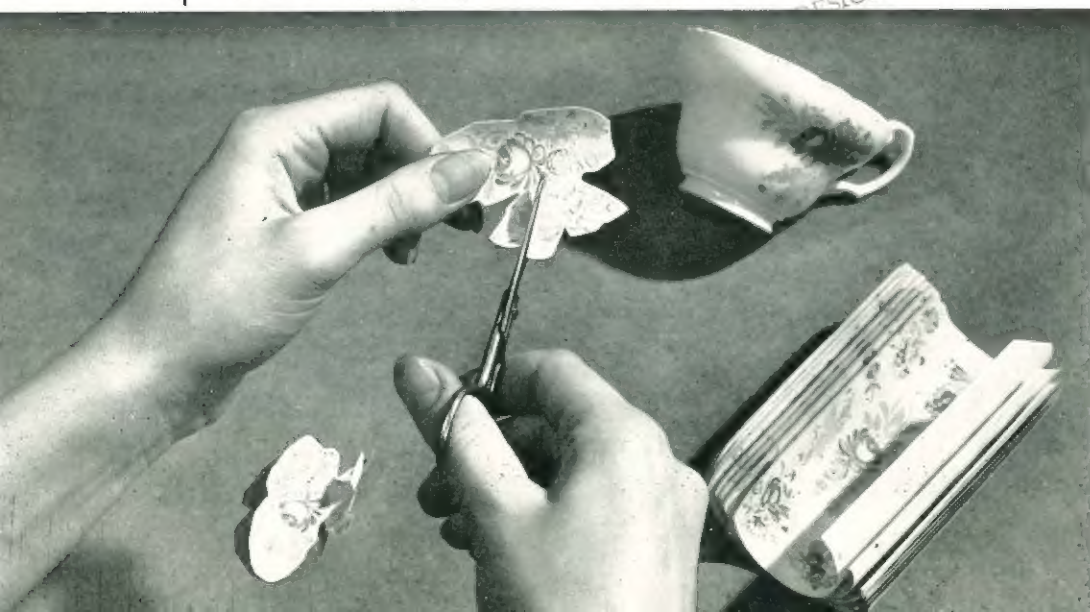


with the ware. Air-bubbles which may be present beneath the enamel cannot be seen and it is essential to ensure that none exists by carefully working over the areas of enamel with the squeegee.

The easiest transfers to apply are centres of flat surfaces and small motifs on curved surfaces. If workers new to the process begin with such decorations, a little practice will soon enable them to acquire sufficient skill to handle large patterns on flat surfaces and to apply transfers to borders and to articles which are not flat.

The film cannot be pinched or gathered in the same way as a print upon tissue or Duplex paper (lithos) but must dry perfectly flat upon the ware. For this reason when decorating hollow-

To allow the transfers to be applied to ware having a heavily curved or undulating surface, they should be trimmed close to the boundary of the design and wherever possible deep cuts towards the centre of the pattern should be made in the clear collodion film.





A correctly trimmed and cut transfer is being positioned. Careful work with the scissors has permitted the design to accommodate itself to the shape of the cup, and though minor creases in the clear part of the film cannot be avoided, they can be ignored with safety.

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ware or applying broad borders to plates, sometimes extending into the well of the plate, it is often necessary to make cuts in the transfer film before it is soaked. Experience will show when such cuts are needed and where they should be made for the best results.

Though many operators will be skilled in the handling of other transfers they should specially watch these points in their first few attempts to apply this new type of transfer.

- ★ The transfer must be applied ENAMEL SIDE UP (not like a litho).
- ★ Water or air-bubbles left beneath the film will cause blisters.
- ★ Creases in the film will cause cracking of the enamel when firing.

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